Mariner B

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

NASA HEADQUARTERS
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IN REPLY REFER TO DL (CPS:asm)

April 7, 1961

Dr. Joshua Lederberg
Department of Genetics
Stanford University
Palo Alto, California

Dear Sir:

The National Aeronautics and Space Administration is preparing plans for a planetary probe to Mars in 1964. This probe is identified tentatively as Mariner B.

The basic purposes of the 1964 Mars mission are to study the planet Mars from a close hyperbolic orbit about the planet, and to study the physics of the interplanetary medium through which the probe would pass. A test flight of the spacecraft into interplanetary space may be made prior to the firing. This flight would probably carry the same experiments as the planetary firing. This letter is an invitation to submit preliminary proposals for experiments to be carried on the Mars mission, and to provide you with planning information to help in formulating such proposals.

It is suggested that proposals contain the following information:

1. A description of scientific objectives, including possible results peculiar to the proposed experiment;

2. A description of instrumentation, including an estimate of developmental requirements;

3. Funding and personnel requirements, the former for 1 July 1961 to 30 June 1962.

It is likely that the number of preliminary proposals will far exceed the capability of the spacecraft to accommodate them. Thus, proposals submitted for the Mariner B scientific payload will be reviewed carefully on the following bases:

1. Scientific content and consistency with the overall scientific objectives of the mission as stated in the appended document;

2. Compatibility with the spacecraft power supply, structure, and telemetry;

3. Probability of meeting spacecraft construction schedule.

Evaluation of proposals will be made by the NASA, JPL, and, in special circumstances, by recognized authorities in the appropriate scientific disciplines. Final selection of the payload will be made by the Space Sciences Steering Committee of NASA Headquarters. Upon acceptance of a proposal, appropriate funding arrangements will be made.

The NASA has assigned to JPL the responsibility for the preliminary design of the spacecraft for this flight. The design of the spacecraft for this mission,and the integration of the most meaningful set of scientific experiments, require the close collaboration of the scientists with JPL. Based on previous experience in the design of similar spacecraft and experiments, it is suggested that experimenters keep in close contact with Dr. A. R. Hibbs or G. Neugebauer, of the Division of Space Sciences, Jet Propulsion Laboratory, during the preparation of proposals. In the case of approved proposals, JPL will provide liaison with the experimenter through a project scientist to assist in the design and development of instrumentation, and to help in the integration of the equipment into the spacecraft. Previously, development and construction of flight instrumentation have often been provided by industrial organizations selected on a competitive technical basis with specific information developed by the experimenter assisted by JPL.

To meet the spacecraft development schedule, it is necessary that proposals be received by 15 May 1961. For specific experiments, primarily in the interplanetary area, utilizing developed and proven techniques which can be readily integrated into the spacecraft, the proposal due date is 15 June 1961, subject to negotiation with JPL. Subsequent to selection of experiments and experimenters, collaboration with JPL will help to define the experimental details and interface specifications so that instrument development for all experiments may begin 15 July 1961. Instrumentation "breadboards" are scheduled for completion by 1 November 1961.

The establishment of experimental groups combining both theoretical and experimental talent is acceptable, and proposals may be submitted by such groups. The success of the Mariner B program depends on a broad participation throughout the scientific community. The participation of your colleagues, who may not have been contacted directly, is solicited. In the event that you know of an interested party, his name should be submitted to NASA Headquarters.

JPL has been in the process of developing some infrared and ultraviolet instrumentation which might be applicable to Mariner B. A document describing this instrumentation can be obtained from Dr. A. R. Hibbs, of the Jet Propulsion Laboratory. It is acceptable to utilize these instrument developments in the preparation of proposals.

Proposals (10 copies) should be directed to Dr. Homer E. Newell, Deputy Director, Space Flight Programs, NASA Headquarters, 1520 H Street N.W., Washington 25, D. C. Three copies of proposals also should be addressed to Dr. A. R. Hibbs, Chief, Division of Space Sciences, Jet Propulsion Laboratory, 4800 Oak Grove Drive, Pasadena 3, California.

Sincerely yours,

Edgar M. Cortright

for Homer E. Newell
Deputy Director
Space Flight Programs

Enclosure